

I. REJECTION UNDER 35 U.S.C. § 103

Claims 1, 4, 5, and 7-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,262,995 issued to Kwak.

Applicant respectfully submits that independent claims 1, 5, 9, and 14 are not rendered obvious by Kwak, because there is no teaching, suggestion, or motivation to render obvious the claim limitations of independent claims 1, 5, 9, and 14.

Applicant's independent claim 1 discloses a method comprising performing ATM segmentation functions with *a segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer*, along with other elements. Similarly, Applicant's amended independent claim 9 discloses a method comprising performing ATM reassembly functions with *a segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer*, along with other elements. In a similar vein, independent claim 5 discloses a code section including *segmentation instructions* implemented in the *CPU of a personal computer* to perform the operation of segmenting data and claim 14 includes *reassembly instructions* implemented in the *CPU of a personal computer* to perform the operation of the reassembly of data.

The Office Action states that Kwak teaches performing segmentation functions of SAR (segmentation and reassembly) functions for ATM (asynchronous transfer mode) with a software module (the software module is not explicitly shown, the software module is inherently required because the AAL processing is done by a CPU) implemented in a CPU (50) of an ATM terminal (Office Action, page 3, paragraph 4). However, as will be discussed below, Applicant respectfully submits that the Office Action has misconstrued the teachings of Kwak, and that Kwak does not teach or suggest a software module implemented solely in a CPU for performing segmentation and reassembly functions.

Moreover, importantly, as the Office Action realizes, Kwak does not teach or suggest the use a personal computer having a CPU to implement a segmentation and reassembly (SAR) software module to perform SAR functions. However, the Office Action goes on to state that one of ordinary skill in the art would have been motivated to use a personal computer as the ATM terminal for multimedia communications and that, therefore, it would have been obvious to one having ordinary skill in the art to use a personal computer as the ATM terminal of Kwak. (Office Action, page 4, paragraph 4). As will be discussed below, Applicant respectfully disagrees with the Office Action on this point.

To begin with, the invention of Kwak relates to an asynchronous transfer mode adaptation layer (AAL) processing apparatus and method in an asynchronous transfer mode (ATM). (Kwak, column 1, lines 7-9). Particularly, the invention of Kwak is an **ATM terminal** having a central processing unit (CPU) operating in conjunction with a software segmentation and reassembly interface device (SSID) 20 to process AAL1, AAL3/4, and AAL5 in ATM. (Kwak, column 1, lines 10-14; emphasis added)-- i.e., not a **personal computer** interfacing to an ATM network in which the CPU of the personal computer *implements ATM segmentation and reassembly functions utilizing a software module (i.e. a SAR software module)*, as in Applicant's claimed invention. Figure 2 of Kwak is a block diagram of an AAL processing apparatus using a software segmentation and reassembly interface device SSID 20 in an ATM terminal (Kwak, column 3, lines 49-52). Figure 3 of Kwak is a more detailed diagram of the software segmentation and reassembly interface device SSID 20. Figures 4 and 5 are flow charts showing AAL1, AAL3/4, and AAL5 processing (e.g. including segmentation and reassembly) performed by the SSID 20 in conjunction with the CPU 50.

Nowhere does Kwak teach or suggest performing ATM segmentation and reassembly functions with *a segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer...* In fact, Applicant's invention is directed away from using ATM terminals with specialized SSID type devices.

As stated in Applicant's patent application, Applicant's invention uses "software implemented in a multipurpose central processing unit to form the segmentation and reassembly functions in a personal computer... The use of software to perform the segmentation and reassembly reduces the cost of building a personal computer." (Application, page 6). Moreover, as the Applicant points out in the application, by utilizing a software module implemented in a CPU to perform these functions, "significant hardware savings may be had *over hardware implementations of any SAR chip.*" (Emphasis added) (Application, page 8). Thus, the invention of using a software module to perform these functions, implemented in a CPU of a personal computer, provides significant advantages over the prior art.

Because Kwak does not teach or suggest performing ATM segmentation and reassembly functions with *a segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer*, Applicant respectfully submits that Applicant's independent claims 1, 5, 9, and 14 are not rendered obvious by Kwak because Kwak does not teach, suggest or render obvious the limitations of Applicant's independent claims 1, 5, 9, and 14.

Furthermore, Applicant respectfully submits that the Office Action's position that one of ordinary skill in the art *would have been motivated* to use a personal computer as the ATM terminal for multimedia communications and that, therefore, it would have been obvious to one having ordinary skill in the art to use a personal computer as the ATM terminal of Kwak (Office Action, page 4, paragraph 4), is untenable. As should be noted, an ATM terminal, such as a networking terminal, is very different from a general-purpose personal computer that can be programmed, easily updated with new programs, is generally low cost in nature, is easily replaceable, etc. There is quite simply no motivation to alter Kwak's ATM terminal that performs ATM functions, and that works well for its intended purpose, to in hindsight try to recreate Applicant's invention. In fact, Applicant's invention is directed towards overcoming the limitations associated with higher cost ATM type terminals, by using general-purpose personal computers.

As aptly stated by the Federal Circuit in *In re Kotzab*, 55 U.S.P.Q.2D (BNA) 1313, 1316-1317 (Fed. Cir. 2000):

Most if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant...*Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference.* (Emphasis added).

Neither, the reference nor the Office Action provide a suitable teaching, suggestion, or motivation to alter Kwak in such way that it would teach performing ATM segmentation and reassembly functions with a *segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer.*

The only rationale given for modifying Kwak is that it would have been obvious to one of ordinary skill in the art to modify Kwak to obtain the claimed invention by merely utilizing a personal computer instead. This is insufficient as a matter of law. As recently pointed out by the Federal Circuit, reliance solely on “skill in the art,” is generally insufficient to modify a reference to reach an obviousness judgment. In *Al-Site Corp. v. VSI Int’l, Inc.*, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999), the Federal Circuit stated: “Rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment.” (Emphasis added).

In fact the MPEP, at MPEP § 2143.01, utilizes *In re Kotzab* to set forth standards as to how the prior art must suggest the desirability of the claimed invention. Further, the MPEP particularly examines the facts of the *Kotzab* case to illustrate where an obvious determination cannot be made in view of a prior art reference in combination with the “skill in the art” component. As stated in the MPEP § 2143.01:

In *In re Kotzab*, the claims were drawn to an injection molding method using *a single temperature sensor* to control a *plurality of flow control valves*... The primary reference disclosed a multizone device having multiple sensors, each of which controlled an associated flow control valve, and also taught that *one system* may be used to *control a number of valves*... The court found that there was insufficient evidence to show that *one system* was the same as *one sensor*... While the control of multiple valves by a *single sensor* rather than by *multiple sensors* was a “technologically simple concept,” there was no finding “as to the specific understanding or principal within the knowledge of the skilled artisan” that would have provided the motivation to use a single sensor as the system to control more than one valve. (Emphasis added).

In the same way, as in the present case, there is no teaching, suggestion, or motivation (except impermissible hindsight) to arrive at Applicant’s invention of performing ATM segmentation and reassembly functions with *a segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer* from Kwak’s ATM terminal having a software segmentation and reassembly interface device (SSID) 20 operating in conjunction with central processing unit (CPU) to process AAL1, AAL3/4, and AAL5 (e.g. including segmentation and reassembly).

Further, if the Office Action does not believe that Applicant has successfully traversed this obviousness rejection, in accordance with MPEP § 2144.03, Applicant respectfully requests that a reference be cited in support of the Office Action’s position that performing ATM segmentation and reassembly functions with *a segmentation and reassembly (SAR) software module implemented in a CPU of a personal computer* was already “well known” in the prior art and/or that it would have been an obvious variation of Kwak at the time of Applicant’s invention.

Thus, Applicant respectfully submits that the Office Action’s argument that: although Kwak does not explicitly teach that the ATM terminal is a personal computer, but that *it was well known in the art* that a personal computer performs a multimedia communication including voice communications and that *those of skill in the art would have been motivated* to use a personal computer as the ATM terminal for multimedia communications such that *it would have been*

obvious to one having ordinary skill in the art to use a personal computer as the ATM terminal of Kwak, is in error, and incongruous with current case law regarding obviousness.

Therefore, Applicant respectfully submits that Kwak, neither alone, nor in combination with the *skill in the art component*, would have rendered obvious Applicant's independent claims 1, 5, 9, and 14 directed to performing ATM segmentation and/or reassembly functions *in a CPU of a personal computer* (e.g. with a segmentation and reassembly (*SAR*) *software module*), at the time of Applicant's invention.

Applicant further does not believe the Office Action is accurate in its assertion that Kwak teaches or suggests traffic shaping, as required by independent claims 1 and 5. As described in Applicant's patent application: "A traffic shaping block 424 receives the stream of ATM cells from the segmentation block 416 and outputs a stream of ATM cells for transmission *to meet the quality of service (QOS) requirements for each VC and for the entire link.*" (Applicant's patent application, page 10, lines 4-7, emphasis added). In support of Kwak teaching traffic shaping the Office Action cites column 5, lines 25-31 of Kwak, which discloses: "reading the ATM cells from the double port RAM 30 and transmitting them to the physical layer 10 in disregard of the interrupt if the SSID 20 is reading the double port RAM 30 (ST74-ST77); and abandoning the ATM cells and generating an operation and management (OAM) cell when the SSID 20 is not reading the double port RAM 30 (ST78-ST80)." Applicant respectfully submits that this does not teach traffic shaping and, further, Applicant respectfully submits that Kwak does not explicitly teach or suggest traffic shaping. Thus, in addition to the previously described reasons, Applicant respectfully submits that independent claims 1 and 5 are further allowable over Kwak.

Accordingly, Applicant respectfully submits that a *prima facie* case of obviousness has not been met and Applicant respectfully requests that the rejection of independent claims 1, 5, 9 and 14 be withdrawn. Therefore, Applicant respectfully submits that independent claims 1, 5, 9 and 14 are non-obvious and allowable. Furthermore, the dependent claims are patentable for

being dependent from allowable base claims. The Examiner is invited to call Applicant's attorney if it is believed that such contact would further examination of the present application.


CONCLUSION

In view of the remarks made above, it is respectfully submitted that pending claims 1, 4, 5, and 7-16 define the subject invention over the prior art of record. Thus, Applicant respectfully submits that all the pending claims are in condition for allowance, and such action is earnestly solicited at the earliest possible date. The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application. To the extent necessary, a petition for an extension of time under 37 C.F.R. is hereby made. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such account.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on: January 17, 2003.


Susan McFarlane 1/17/03
Date